Race and Heredity of Mental Characteristics

Prof. Dr. Eugen Fischer

Journal for Morphology and Anthropology, Vol. 38, No. 1, LECTURES BY GERMAN ANTHROPOLOGISTS delivered at the INTERNATIONAL CONGRESS OF ANTHROPOLOGICAL AND ETHNOLOGICAL SCIENCES FROM 31 JULY TO 6 AUGUST 1938 IN COPENHAGEN (1939), pp. 1–9 (9 pages)

From the Kaiser Wilhelm Institute for Anthropology, Human Hereditary Science and Eugenics, Berlin-Dahlem

Race and Heredity of Mental Characteristics

By Eugen Fischer.

Human hereditary science has, in the course of the last 20 years, undergone a development such as scarcely any other research relating to man. It lies in the nature of the matter that in the field of heredity in man the investigation of the inheritance of so-called mental-psychological characteristics is the most backward, the least developed. And yet it requires no word of elaboration that precisely the question of the hereditary foundation of our mental-psychological life interests us more urgently than, say, the inheritance of hair colors or diseases or the like.

It is in principle not entirely correct and epistemologically not admissible to speak of mental and psychological "characteristics" or "qualities" and their inheritance. It is naturally a matter of the hereditary foundations upon the basis of which the phenomena of mental-psychological life run their course, of the inheritance of differences and particularities therein, and of the analysis of the relations of these individual processes to those foundations and of the composition of that which is here called "hereditary foundation." I am conscious of the philosophical background, but can pass over it entirely here, where I am concerned solely with the question of heredity. I shall, then, with this awareness, speak of mental "qualities" and have to investigate their hereditary foundation.

The entire problem actually divides into two parts, which do not necessarily stand in such dependence upon one another that the affirmation of the one would simply include or condition the affirmation of the other. The first question is whether in man the mental-psychological qualities recognizable to us, that is, the foundation of the mental-psychological personalities, rest upon hereditary dispositions, that is, are transmitted in some hereditary course from generation to generation. And the second question goes to whether among the hereditary differences within mankind, which we designate as races, mental differences also belong, or, expressed otherwise, whether the races, alongside the bodily differences, also have mental differences.

The question of the heritability of the mental qualities of man is, in my opinion, in principle unobjectionably resolved, but in relation to this resolution in the positive sense in all its particulars is still in the very first beginnings of

knowledge. Over almost the entire domain we can only prove again and again — in my opinion quite unobjectionably — that genuine hereditary dispositions in the sense of hereditary dispositions for bodily healthy and morbid qualities are present, but the comprehension of the individual dispositions, the knowledge of their mutual relations and of their manifestations resting upon the heredity-environment relation, are still of quite modest scope. Precisely because I believe I can survey this state of our research and our knowledge exactly as a geneticist, I may emphasize the positive part all the more sharply.

It cannot today be doubted that the entire mental-psychological life of man is founded upon individual hereditary dispositions which, by their nature, are demonstrably fundamentally the same as those for morphological, physiological, and pathological characteristics. Thus, at bottom, hereditary factors or genes underlie these mental characteristics, which are transmitted according to the Mendelian law. The manifestation of each characteristic is then dependent upon the nature and relation of the genes and the periastasis acting upon the gene-unfolding. It should be emphasized here at once that I have thereby said nothing about the number of genes coming into consideration, about the relation of individual mental-psychological qualities to individual genes or to one another mutually, about the mutual dependence of certain genes upon certain characteristics or other genes. These latter problems are those which today stand at the focal point of hereditary-psychological research and for the most part still await resolution. Only from this foundation can the approach to genuine and specific racial psychology be made slowly and with success. In principle, then, the existence of hereditary dispositions for the mental-psychological is proven. To discuss all the proofs here individually is of course impossible; that would yield a lecture of several hours on hereditary psychology. I must confine myself to the naming of the entire groups of proofs. These are as follows:

a.) Twin research: One can today quite literally say that the most brilliant instrument of human investigation is twin research. I may recall thereby that twin research, in its results for individual characteristics of a morphological nature, healthy and morbid, as for individual functions, healthy and morbid, gives us the unobjectionable decision as to whether a hereditary disposition underlies the matter at all, and further teaches us, at least to a certain degree, how far in the respective appearance-picture we must perceive the so-to-speak pure hereditary effect and how far its modification through periastasis. Concerning the question of the individual-factor sufficient hereditary factor or gene or genes, twin research tells us nothing. Applied to the mental characteristics, twin research has unobjectionably furnished us the question of the existence of hereditary foundations for numerous phenomena, which I will

not enumerate individually. It concerns both individual phenomena as well as the comprehension of the entire mental-psychological constitution of twins; I refer to the lecture of Mr. Gottschaldt[1]. Hereditary foundation for the mental-psychological is thus demonstrated.

b.) The demonstration of the individual genes and of the hereditary course of the individual characteristics can only be accomplished genealogically. The brilliant edifice of modern hereditary science arose (setting aside the cytological researches) exclusively on the basis of crossing experiments, that is, on the basis of the tracing of certain characteristics whose carriers were crossed, and whose reappearance in the following generations was observed and recognized as proof of lawful hereditary course. In man, the arbitrary bringing about of crossing for the sake of the experiment is replaced by the family-genealogical observation and tracing of the results of (from our standpoint) chance crossings.

The tracing of the reappearance of mental-psychological characteristics in generations is infinitely much more difficult than that of bodily ones. And as here, the tracing of the normal is more difficult than that of the far more conspicuous and more singular morbid. The first demonstration of Mendelian inheritance in man therefore also concerned a morbid characteristic (brachydactyly, Farabee 1905). Only three years later did the same demonstration succeed for normal characteristics (eye colors, hair colors, other racial characteristics, Davenport, Hurst, Eugen Fischer, 1908). The same holds today with psychical phenomena. The fundamental investigations of Rüdin and his school (Lange, Luxenburger, Stumpf, Brugger, then Lenz, Kranz (Bonn) and others) have unobjectionably demonstrated for a whole series of psychopathic phenomena the hereditary course and therewith the existence of individual underlying genes. From the recessiveness or dominance of a morbid deviation of psychopathic occurrence there follows, however, according to the unobjectionable foundations of the Mendelian hereditary laws, in each case the existence of a corresponding normal hereditary disposition with opposite hereditary course. If hereditary feeble-mindedness rests upon recessive hereditary dispositions — and it does — then non-feeble-mindedness, that is, the total foundation of our normal thinking-related health, rests upon corresponding dominant hereditary units. If schizophrenia, if manic-depressive insanity, if psychopathies rest upon certain partly recessive, partly dominant, partly indeed also sex-linked hereditary dispositions, then the corresponding undisturbed healthy mental-psychological dispositions do so unobjectionably upon the dispositions transmitted in each case with opposite hereditary course. This proof is thus furnished.

One can also apply another mode of consideration and arrives at the same result.

1 See the following essay in this issue.

All hereditary morbid deviations from the normal arose (and arise) through mutations of normal hereditary dispositions, thus, for instance, hereditary diabetes through mutation of genes of carbohydrate metabolism (briefly put), polydactyly through mutation of the genes which are involved in the formation of the hand and fingers. Accordingly, morbid mental-psychological hereditary dispositions have their origin through mutation of normal psychical hereditary dispositions. These latter are therefore the precondition for those mutations. The demonstrated heritability of the morbid mutations proves the heritability of the unmutated healthy mental dispositions.

But alongside this indirect proof from the inheritance of the pathological, direct proofs exist for very many, above all for special talents, on the basis of genealogical tracing of the characteristics. It lies in the complexity of the phenomenon of the effects of mental talents and the interweaving of the individual psychological and mental qualities that a numerical counting of the individual characteristic-carriers, and therewith the numerical analysis of recessiveness or dominance for these characteristics, has not hitherto succeeded. But concerning the hereditary transmission of the relevant talents there can be not the slightest doubt, on the basis of their accumulation in the relevant families — one can say quite literally, on the basis of their breedability and actual (of course unconscious and unintentional) breeding. I must here also confine myself to pointing to the well-known investigations and compilations concerning the familial and, traceable over many generations, occurrence of musical, mathematical, generally intellectual, technical, artistic, etc. talents. From Galton's investigations of gifted families up to the present-day summaries in the textbooks of hereditary science, an enormous body of material has accumulated.

I therefore summarize: concerning the inheritance of mental characteristics, if I may express it briefly thus, no one who understands anything of human inheritance can doubt.

The second point is then whether these inherited mental characteristics show only individual differences, these however distributed uniformly over the whole of mankind, or whether group-wise differences exist, such as have always been known for many bodily characteristics. These characteristic-differing groups we call, as is well known, races. The question therefore runs: do mental characteristics also belong to the racial differences.

In a word, the concept of race must here be made precise. All racial characteristics are hereditary characteristics and rest upon individual genes. This is demonstrated through the investigations of racial crossings; an exception we do not know. Races are therefore groups with hereditary characteristics differing from those of other groups. In purely genetic terms I formulate the definition

by saying that human races are groups with a certain stock of homozygous genes which are lacking in other groups. It is therefore to be investigated whether the mental characteristics demonstrated earlier as hereditary belong to these group-wise differing hereditary characteristics which we call racial characteristics.
I hold the proof of this to be furnished, and would therefore assert that the mental characteristics of man, resting upon hereditary disposition, differ according to race. The difference is, as with very many bodily racial characteristics, not an exclusive one, but of such a kind that the individual characteristics have their dispersion curves of their expression in the relevant race, as against other races, at a different peak point and with a different breadth of dispersion. The breadths of dispersion tend, as with most bodily racial characteristics (e.g. body height, head form, lip widths, etc.), to overlap. The proofs for this assertion are as follows.
a.) Just as the anthropology of the past, or that of today in the hands of anthropologists not trained in genetics and not grasping the real biological problems, first established racial differences of a bodily kind in a purely descriptive manner, measuring and describing (whereby also on occasion non-hereditary, thus not race-characterizing characteristics crept in), in exactly the same way one first attempted and still attempts simply to establish the mental differences between races, without going into their nature, that is hereditary foundation, and to present them with numerical expression where possible.
For the carrying out of these tasks, above all for the latter purpose — the seemingly more precise, in any case more readily numerical establishment as against simple observation — one makes use, as is well known, of the so-called test investigations. Into their shortcomings and advantages, into the inadequacy of test investigations of individual selected mental performances and of the conclusions drawn from them regarding underlying talents, I cannot possibly enter. But one may well say that, not withstanding these limitations, test investigations have their great value. For our question, now, numerous such works, above all in the United States, have brought the unobjectionable result that a large series of mental performances and mental-psychological characteristics differ among the individual races of the Europoid, Negroid, and Mongoloid branches, but also among individual races within such a branch.
I point above all to the numerous investigations on the American army. They all turn out positive in our sense. I cannot possibly name the individual works here, but I would wish to emphasize that the large investigations which Garth published in 1931[2] and from which he wished to derive an absence of racial differences actually demonstrated the racial differences, as Petermann[3] has

2 Garth, Race psychology, New York, 1931.
3 Petermann, The Problem of the Race Soul, Leipzig 1935.

excellently set fourth.
Concerning the existence of qualitative mental differences between the races, that is, unequal distribution of highest and lesser talents, there can be no doubt. Their heritability was demonstrated earlier; they are therefore racial differences. I refer alongside this for many particulars to the presentations of Lenz[4] and Reinöhl[5].
As against these test investigations, the researches are then also to be named which demonstrate race-wise differences in the mental domain through description and analysis of the mental-psychological total personality of persons of different races. In part such individual investigations cannot be separated from those which draw conclusions regarding racial mental differences from the mental performances of entire peoples; I wish to treat these afterwards specially. In the narrower domain, the analysis of mental structure according to race, it is the particular merit of Clauss[6] to have undertaken a first advance into this difficult domain. Very much in his presentations is in need of criticism. But his demonstration that certain forms of expression and style of the mental personality of the Oriental race and of the Near Eastern race are, as against the European, fundamentally different, stands, even if many individual elaborations, for instance concerning the relation of the psychological and the bodily, are rejected.
If therefore this law of style is racially different, and if on the other hand the mental is hereditary, then precisely those mental differences manifesting themselves therein are racial differences.
b.) If mental characteristics belong to the racial differences, they must, in the crossing of races, display a certain relation, analogous to the bodily characteristics. Test investigations on genuine Bastard populations exist only in quite small numbers. I name the excellent work of Davenport and Steggerda[7], which furnishes the demonstration that the individual mental characteristics investigated in mulattoes are on the whole intermediary between those of whites living on the one hand and Negroes on the other in socially completely equal circumstances, with distinct differences of the individual characteristics in transgressing toward the one or the other side. In this crossing, therefore, these mental characteristics behave completely as bodily racial characteristics do, a

4 Lenz, "The Morbid Hereditary Dispositions" and "The Heritability of Mental Characteristics" in Baur-Fischer-Lenz, "Human Hereditary Science," 4th edition, Munich 1937.
5 Reinöhl, The Heredity of Mental Talent. Munich 1937.
6 Clauss, L. F., Of the Soul and Countenance of Races and Peoples. Munich 1929.
7 Davenport and Steggerda, Race Crossing in Jamaica. Washington 1929.

behavior which can only be explained through the hereditary course. They are therefore racial characteristics.

c.) To these demonstrations of the existence of mental racial differences, carried out on the one hand purely descriptively, on the other crossing-genetically, I would now wish to place alongside a further proof, taken from the general genetics of man. I am conscious that it is only a circumstantial proof, that it lacks the exactness of an experimental foundation, but I hold the indications to be numerous and striking enough that it is binding.

The general characteristics of man rest of course upon hereditary dispositions. Specifically of those characteristics of man which distinguish him as against the most closely related animal forms, we know this. The proofs are given in each case by the fact that morbid (mostly demonstrable as hereditary) deviations of these formations are readily demonstrable as hereditary, in that their recessive or dominant hereditary course is ascertainable. Thus hairlessness rests upon a (recessive) hereditary factor; consequently the human hairiness as such must also rest upon a hereditary factor, present of course in all human races. Body height rests upon certain hereditary factors, as the occurrence of hereditary morbid forms of dwarfism and gigantism demonstrates. Nasal structure as such (nostrils, tip, bridge, septum), lip form as such, etc., rest upon hereditary factors common to all men, as the hereditary lower indentation of the nasal wings, the harelip, etc., demonstrate. The formation of pigment, fundamentally the same in men of all races, in the deep layers of the epidermis, at certain places in the dermis, in hair follicles and hairs, etc., rests upon generally human hereditary factors, as the everywhere occurring hereditary partial and general albinism demonstrates. In short, everywhere we see the operation of such hereditary factors common to all men, whose existence is demonstrable.

To all such so-to-speak general hereditary factors there now join particular ones. One might almost wish to say figuratively that grafted upon them are particular ones which are not the same in all men, but differ group-wise, which difference precisely separates these groups hereditarily, which groups we then call races. Thus the individual forms of hairiness are regulated by the individual race-wise distributed factors for straightness, smoothness, spiral twisting, etc. The race-wise body height — here pygmy stature, there tall stature, etc. — is governed by race-wise differing hereditary factors on the basis of the total growth factors of generally human stamp. To the general factor of lip formation (the opposite of harelip) there come the individual racial factors for thick lip, convex lip, etc. To the general pigment factors there come the particular ones for blondness, brown or black coloring of the hair, yellow coloring or color-poverty of the skin. There is no hereditary characteristic specifically human as against apes that would be so to speak simply human. All are beyond this human-unity racially elaborated

and realized in race-wise differing individual forms. This therefore appears to be a law of formation in the heredity of man. Now we have, as shown above, the proof that the mental characteristics of man likewise rest upon hereditary dispositions. Should now these hereditary dispositions, which otherwise conform completely to the hereditary laws of bodily hereditary characteristics in hereditary course etc., be in this formation alone entirely otherwise? Nothing speaks for this otherness. Rather, on the contrary, one can say the following: Quite obviously there exist in the mental-psychological domain certain foundations which are the same in all men, setting aside pathological cases. Already the fundamental sameness of mental illnesses indicates this. No one will doubt that fundamentally the men of all races can think, have acts of will, possess memory, imagination, states of mood, etc. All of that must, as elaborated earlier, rest upon a hereditary foundation common to mankind. To these there join then, as I said figuratively earlier, grafted upon them, the particular hereditary dispositions for the psychical picture of the individual race. It is to be expected that the outward effects of these, or of many of these special dispositions, will overlap on the basis of the general ones, just as, for instance, the body height of the tallest-growing race of an hereditarily pygmean race is higher than, say, that of the smallest-growing individuals of an hereditarily similarly medium-sized race, and whose largest individuals are again larger than the smallest of an hereditarily very tall-growing race. These theoretically to be expected overlapping curves of the mental hereditary characteristics of the individual races are, however, precisely what experience has found even with such imperfect means as test methods are. For everyone to whom Mendelian inheritance and the whole enormously complicated phenomenon of chromosomes, genes, and genomes is not merely an external number-game in connection with schematic movements of nuclear loops, but a life-process admirably deeply seen through by us, of equal validity for all living things, this parallel conclusion is simply binding. It is thereby once again a conclusive proof that the mental characteristics are also racial characteristics. The races are therefore hereditarily different not only bodily, but also mentally.

d.) Through the fact that man, in contrast to all animals without exception, lives not only in biological but in special, for him in another sense biologically become, namely social associations, we have yet a particular possibility of investigating the effects of mental-psychological dispositions. All those social associations — hordes, tribes, peoples, states, etc. — create and have created for themselves some culture peculiar to them, on the basis of their mental disposition and under certain environmental conditions. All consist of individuals of one or several races. Their boundaries and the racial boundaries do not coincide. But every cultural group consists of course of some races or

other. Since their culture depends at least to a very great part directly upon their mental capability, one can conclude from the study of this culture, its origin, its fate, its possible rise or decline, regarding the mental-psychological structure of the race or races present in or leading the group. Thus the investigation of the mental performances of peoples, as expressed in their material and immaterial culture, yields us an insight into the race-wise difference of the mental-psychological dispositions. These then explain to us, to a certain degree, the historical fate of the peoples and their cultures. Even though it must be admitted that regarding these connections much that is frivolous and untenable has been asserted from many sides, it must nevertheless be emphasized that the fundamental nature of these connections is established. The peoples are composed differently according to race; the races differ through hereditary, bodily and mental characteristics; upon mental characteristics rests (each time under certain environmental conditions) the culture; therefore this too is racially conditioned.

The conclusion is therefore binding: Mental characteristics in the sense named at the outset are hereditary. The mental characteristics differ according to race. The history and culture of mankind are dependent upon the difference of the racial characteristics.